What is claimed is:

1. An apparatus for processing AAL2 supporting multiple virtual channels comprising:

a transmitting part which multiplexes data from a plurality of AAL2 users into transmission ATM cells based upon corresponding virtual path/channel information, and transmits to a corresponding destination a transmission ATM cell through one of a plurality of channels; and

a receiving part which receives a reception ATM cell through one of the plurality of channels, demultiplexes the reception ATM cell based upon corresponding virtual path/channel information, and transmits the demultiplexed data to corresponding AAL2 users.

2. An apparatus of claim 1, wherein the transmitting part includes:

a first buffer unit which stores and outputs each of the data from a plurality of AAL2 users as AAL2 user data;

a first memory unit which stores and controls virtual path/channel information and channel identifier information according to the routing information in each AAL2 user data;

a mini-cell constructing part which assigns a channel identifier information from the first memory unit to a user data

of the AAL2 data and generates mini-cells;

an ATM cell constructing part which multiplexes each mini-cell generated by the mini-cell constructing part into a payload of a transmission ATM cell corresponding to a virtual path/channel information of each respective mini-cell and generates transmission ATM cells corresponding to different virtual path/channel information, wherein said virtual path/channel information is output by the first memory unit;

a second memory unit which stores incomplete transmission ATM cells corresponding to different virtual path/channel information from the ATM cell constructing part; and

a transmission output buffer unit which stores and outputs each full transmission ATM cells generated by the ATM cell constructing part through a corresponding channel;

wherein the ATM cell constructing part multiplexes a mini-cell generated by the mini-cell constructing part into a payload of an incomplete transmission ATM cell from the second memory if an incomplete transmission ATM cell corresponding to a virtual path/channel information of the mini-cell is stored in the second memory.

3. An apparatus of claim 2, further comprises a timer which

sets a predetermined period for each transmission ATM cell corresponding to different virtual path/channel information before the ATM cell constructing part begins multiplexing mini-cells into each transmission ATM cells; and wherein the transmission output buffer unit stores and outputs an incomplete transmission ATM cell from the second memory if the predetermined period of an incomplete transmission ATM cell has elapsed.

4. An apparatus of claim 2, wherein the first buffer unit comprises:

a transmission input buffer unit which stores the AAL2 user data; and

a transmission input buffer controller which reads and outputs the AAL2 user data from the transmission input buffer.

5. An apparatus of claim 2, wherein the first memory unit comprises:

a third memory which stores the virtual path/channel information and channel identifier information according to the routing information in each AAL2 user data; and

a transmission table controller which controls and outputs information from the third memory.

6. An apparatus of claim 2, wherein the second memory comprises:

a third memory which stores incomplete transmission ATM cells;

a fourth memory which stores a table storing address information of each transmission ATM cells stored in the third memory; and

a virtual path/channel table controller which controls input and output of each incomplete transmission ATM cells to and from the third memory according to an address information of each transmission ATM cells stored in the fourth memory.

7. An apparatus of claim 1, wherein the receiving part comprises:

a first buffer unit which stores each reception ATM cell from the plurality of channels;

a first memory which stores routing information according to a virtual path/channel information and channel identifier information of each respective reception ATM cell;

a mini-cell deconstructing part which demultiplexes mini-cells from a payload of each reception ATM cells;

a second memory unit which stores incomplete mini-cells from

the mini-cell deconstructing part;

a user data constructing part which assigns a routing information from the first memory to each complete mini-cell according to a channel identifier information and the virtual path/channel information of each complete mini-cell; and

a reception output buffer unit which stores and transmits each complete mini-cell from the user data constructing part to corresponding AAL2 users;

wherein the mini-cell deconstructing part demultiplexes a mini-cell from a payload of at least one reception ATM cell and from a corresponding incomplete mini-cell stored in the second memory unit if a mini-cell is inserted into payloads of more than one reception ATM cells.

8. An apparatus of claim 7, wherein the first buffer unit comprises:

a reception input buffer which stores each reception ATM cells from the plurality of channels; and

a reception input buffer controller which reads and outputs each reception ATM cell from the reception input buffer.

9. An apparatus of claim 7, wherein the second memory

comprises:

a third memory which stores each incomplete mini-cells;

a fourth memory which stores addresses of each incomplete mini-cell stored in the third memory; and

a mini-cell table controller which controls input and output of each incomplete mini-cells to and from the third memory according to an address information of each mini-cells stored in the fourth memory.

10. An apparatus of claim 1, wherein the transmitting part comprises:

an AAL2 transmitter which multiplexes the data from the plurality of AAL2 users to generate a CPS-PDU, and assigns a routing information to the generated CPS-PDU;

a first memory which stores CID information assigned to each data from the plurality of AAL2 users;

a second memory which stores the routing informations for identifying one of the plurality virtual channels set to a destination of a CPS-PDU; and

a transmission buffer which stores the CPS-PDU from the AAL2 transmitter in one of a first multiple virtual channels identified by the assigned routing information to form and to

transmit a transmission ATM cell through the channel identified by the assigned routing information; and wherein the receiving part comprises:

a reception buffer which stores CPS-PDU from each reception ATM cells received through one of the plurality of channels, the CPS-PDU stored in a corresponding one of a second multiple virtual channels through which each reception ATM cell is received;

an AAL2 receiver which demultiplexes CPS-PDU from the second buffer based upon a routing information to generate and transmit the demultiplexed data to corresponding AAL2 users based upon a CID information;

a third memory which stores CID information; and

a fourth memory which stores routing information.

11. An apparatus of claim 10, wherein the AAL2 transmitter comprises:

an input buffer controller which receives CPS-packets from the plurality of AAL2 users;

an AAL2 transmission functioning part which converts the CPS-packets from the input buffer controller into CPS-PDU; and

an output buffer controller which controls the transmission

buffer to transmit the CPS-PDU from the AAL2 transmission functioning part through one of the first multiple virtual channels.

12. An apparatus of claim 10, wherein the AAL2 receiver comprises:

an input buffer controller which receives CPS-PDU through one of the second multiple virtual channels;

an AAL2 receiver functioning part which converts the CPS-PDU from the input buffer controller to CPS-packets; and

an output buffer controller which transfers the CPS-packets from the AAL2 receiver functioning part to corresponding AAL2 users.

13. A method for processing AAL2 supporting multiple virtual channels comprising:

(a1) multiplexing data from a plurality of AAL2 users into transmission ATM cells based upon corresponding virtual path/channel information, and transmitting to a corresponding destination a transmission ATM cell through one of a plurality of channels; and

(b1) receiving a reception ATM cell through one of the

plurality of channels, demultiplexing the reception ATM cell based upon corresponding virtual path/channel information, and transmitting the demultiplexed data to corresponding AAL2 users.

14. A method of claim 13, wherein (a1) comprises:

(a2) storing and outputting each of the data from a plurality of AAL2 users as AAL2 user data;

(b2) storing and controlling virtual path/channel information and channel identifier information according to the routing information in each AAL2 user data;

(c2) assigning a channel identifier information from the first memory unit to a user data of the AAL2 data and generating mini-cells;

(d2) multiplexes each generated mini-cell into a payload of a transmission ATM cell corresponding to a virtual path/channel information of each respective mini-cell and generating transmission ATM cells corresponding to different virtual path/channel information;

(e2) storing incomplete transmission ATM cells corresponding to different virtual path/channel information from (d2); and

(f2) storing and outputting each full transmission ATM cells generated in (d2) through a corresponding channel;

wherein in (d2), multiplexing a generated mini-cell into a payload of an incomplete transmission ATM cell from (e2) if an incomplete transmission ATM cell corresponding to a virtual path/channel information of the mini-cell is stored.

15. A method of claim 14, further comprises: setting a predetermined period for each transmission ATM cell corresponding to different virtual path/channel information before multiplexing mini-cells into each transmission ATM cells in (d2); and in (f2) storing and outputting an incomplete transmission ATM cell from (e2) if the predetermined period of an incomplete transmission ATM cell has elapsed.

16. A method of claim 13, wherein (b1) comprises:

(a2) storing each reception ATM cell from the plurality of channels;

(b2) storing routing information according to a virtual path/channel information and channel identifier information of each respective reception ATM cell;

(c2) demultiplexing mini-cells from a payload of each reception ATM cells;

(d2) storing incomplete mini-cells from (c2);

(e2) assigning a routing information from (b2) to each complete mini-cell according to a channel identifier information and the virtual path/channel information of each complete mini-cell; and

(f2) storing and transmitting each complete mini-cell from the user data constructing part to corresponding AAL2 users;

wherein in (c2), demultiplexing a mini-cell from a payload of at least one reception ATM cell and from a corresponding stored incomplete mini-cell if a mini-cell is inserted into payloads of more than one reception ATM cells.

17. A method of claim 13, wherein (a1) comprises:

multiplexing the data from the plurality of AAL2 users to generate a CPS-PDU, and assigning a routing information to the generated CPS-PDU;

storing CID information assigned to each data from the plurality of AAL2 users;

storing the routing informations for identifying one of the plurality virtual channels set to a destination of a CPS-PDU; and

storing the CPS-PDU in one of a first multiple virtual channels identified by the assigned routing information to form and to transmit a transmission ATM cell through the channel

identified by the assigned routing information; and wherein (b1) comprises:

storing CPS-PDU from each reception ATM cells received through one of the plurality of channels, the CPS-PDU stored in a corresponding one of a second multiple virtual channels through which each reception ATM cell is received;

demultiplexing CPS-PDU from the second buffer based upon a routing information to generate and transmit the demultiplexed data to corresponding AAL2 users based upon a CID information; and

storing CID information and routing information.

18. A method for processing AAL2 supporting multiple virtual channels comprising:

(a) multiplexing packet data transmitted from at least one AAL2 user to generate protocol data;

(b) assigning virtual channel identification information (R_Tag), set by destinations, to the protocol data; and

(C) transmitting the protocol data through corresponding virtual channel according to the assigned identification information (R_Tag).

19. A method of claim 18, wherein in (a):

assigning a header to the packet data, said header consisting CID information, LI information, UUI information, and HEC information; and

assigning the virtual channel identification information and a start field to the packet data to which the header is assigned, said start field consisting of OSF information, a sequence number of the protocol data, and a parity bit for correcting error.

20. A method of claim 18, wherein a predetermined byte having identification information for identifying the virtual channels is additionally assigned to the protocol data.

21. A method of claim 20, wherein the predetermined byte is one-byte.

22. A method of claim 18, wherein in (c) transmitting the protocol data through one of a buffers which are set corresponding to virtual channels.

23. A method of claim 18, further comprising:

(d) receiving the protocol data by ATM layer through the

virtual channel;

(e) demultiplexing the received protocol data to generate packet data, dividing the packet data by users or virtual channels; and

(f) transmitting the packet data to an AAL2 user according to a corresponding destination.

24. A method of claim 23, wherein a predetermined byte having identification information for identifying the virtual channels is additionally assigned to the protocol data.

25. A method of claim 23, wherein in (e):

storing the received protocol data in a plurality of reception buffers which are set corresponding to the virtual channels; and

demultiplexing the protocol data, stored in the plural reception buffers, using the identification information for identifying the virtual channels.